WHAT IS CLAIMED IS:

1.   A sensitive substance used in an acoustic wave gas sensor, the sensitive substance being dissolved in a solvent so as to detect predetermined substances in the acoustic wave gas sensor, wherein the sensitive substance comprises cellulose nitrate.

2.   The sensitive substance of claim 1, wherein the predetermined substances are at least one of acetone, ethanol, and toluene.

3.   The sensitive substance of claim 1, wherein the amount of cellulose nitrate dissolved in the solvent is from about 0.3 to about 3.0 weight %.

4.   The sensitive substance of claim 1, wherein the sensitive substance further comprises dibutyl phthalate, a mixture of benzene and ethanol, ethyl acetate, andmercaptoundecanoic acid.

5.   A sensitive substance used in an acoustic wave gas sensor, the sensitive substance being dissolved in a solvent so as to detect predetermined substances in an acoustic wave gas sensor and being used as a sensitive film,
        wherein the sensitive substance comprises:
        CMP comprised of cellulose nitrate, dibutyl phthalate, a mixture of benzene and ethanol, and ethyl acetate; and
        mercaptoundecanoic acid.

6.   The sensitive substance of claim 5, wherein the predetermined substances are at least one of acetone, ethanol, and toluene.

7.   The sensitive substance of claim 5, wherein the CMP comprises:
        from about 5 to about 25 weight % of cellulose nitrate;
        from about 25 to about 50 weight % dibutyl phthalate ;
        from about 1 to about 10 weight % of a benzene-ethanol mixture of; and
        from about 40 to about 60 weight % of ethyl acetate.

8.   The sensitive substance of claim 7, wherein the amount of the CMP dissolved in the solvent is from about 0.3 to about 3.0 weight %, and the amount of the mercaptoundecanoic acid dissolved therein is from about 0.05 to about 0.5 weight %.

5   9.   The sensitive substance of claim 8, wherein the CMP comprises a mixture of about 75 weight % benzene and about 25 weight % ethanol.

10.   The sensitive substance of claim 5, wherein the amount of the CMP dissolved in the solvent is from about 0.3 to about 3.0 weight %, and the amount of the

10   mercaptoundecanoic acid dissolved therein is from about 0.05 to about 0.5 weight %.

11.   A surface acoustic wave gas sensor comprising:

a piezoelectric substrate;

an input transducer and an output transducer formed on the piezoelectric substrate;

15   and

a sensitive film for detecting predetermined substances, the sensitive substance being formed between the input transducer and the output transducer,

wherein the sensitive film is formed by coating CMP and mercaptoundecanoic acid on the piezoelectric substrate, the CMP comprising cellulose nitrate, dibutyl phthalate, a mixture

20   of benzene and ethanol, and ethyl acetate

12.   The surface acoustic wave gas sensor of claim 11, wherein the predetermined substances are at least one of acetone, benzene, dichloroethane, ethanol, and toluene.

25   13.   The surface acoustic wave gas sensor of claim 11, wherein the CMP is comprised of:

from about 5 to about 25 weight % of cellulose nitrate;

from about 25 to about 50 weight % dibutyl phthalate ;

from about 1 to about 10 weight % of a benzene-ethanol mixture of; and

30   from about 40 to about 60 weight % of ethyl acetate.

14.   The surface acoustic wave gas sensor of claim 13, wherein the amount of the CMP dissolved in the solvent is from about 0.3 to about 3.0 weight %, and the amount of the mercaptoundecanoic acid dissolved therein is from about 0.05 to about 0.5 weight %.

15.   The surface acoustic wave gas sensor of claim 11, wherein the amount of the CMP dissolved in the solvent is from about 0.3 to about 3.0 weight %, and the amount of the mercaptoundecanoic acid dissolved therein is from about 0.05 to about 0.5 weight %.

16.   A surface acoustic wave gas comprising:

a piezoelectric substrate;

an input transducer and an output transducer formed on the piezoelectric substrate; and

a sensitive film for detecting predetermined substances, the sensitive substance being formed between the input transducer and the output transducer,

wherein the sensitive film is formed by coating cellulose nitrate dissolved in acetone on the piezoelectric substrate.

17.   The surface acoustic wave gas sensor of claim 16, wherein the predetermined substances are at least one of acetone, dichloroethane, ethanol, and toluene.

18.   The surface acoustic wave gas sensor of claim 16, wherein a ratio of the cellulose nitrate dissolved in the acetone is from about 0.3 to about 3.0 weight %.

19.   The sensitive substance of claim 1, wherein the solvent is acetone.

20.   The sensitive substance of claim 5, wherein the solvent is acetone.

21.   A method of using a sensitive substance which comprises using a sensitive substance in an acoustic wave gas sensor by dissolving the sensitive substance in a solvent so as to detect predetermined substances in the acoustic wave gas sensor, the sensitive substance comprising cellulose nitrate.